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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Daniel M. Gruen

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EXAMINER

DATSKOVSKIY, SERGEY

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 08/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/051,450	GRUEN ET AL.	
	Examiner	Art Unit	
	Sergey Datskovskiy	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-19 have been submitted for examination.
2. Claims 1-19 have been rejected.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 10-19 are rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter.
4. Claims 10-18 are directed towards a computer readable media comprising program code executable on a computer. However, Specification lacks any definition of a computer readable media, which means that said media is not limited to a tangible media and, therefore, can be represented as a signal. Claims that recite nothing but the physical characteristics of a form of energy, such as a signal or a carrier wave define energy or magnetism, per se, and as such are nonstatutory natural phenomena, see O'Reilly, 56 U.S. (15 How.) at 112-14.
5. Claim 19 is directed towards a computerized method for recognizing and flagging a data item. Said method represents an abstract algorithm implemented in software. Abstract ideas (see Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759) or mere manipulation of abstract ideas (see Schrader, 22 F.3d at 292-93, 30 USPQ2d at 1457-58) are not patentable. However, for claims including such excluded subject matter to

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be eligible, the claims must be for a practical application of the abstract idea. Such practical application can be identified in the following ways:

- a. The claimed invention “transforms” an article of physical object to a different state or thing.
- b. The claimed invention otherwise produces a useful, concrete and tangible result.

The acts of applying rules and performing calculations do not produce any physical transformations. The next step is to determine whether the claimed invention produces a useful, concrete and tangible result. The last step of claim 19 is “*taking an action*”. Such action does not imply producing a tangible result since it is not clear if the action has any effect outside of a computer. Said action can even be “do nothing”, producing no result. Therefore, the only result of claim 19 is a “flagged data item”. This translates into changing bits in a computer memory, which is not a tangible result. Flagging data is an operation that does not produce any real-world output that could be called a tangible result.

6. Thus, claim 19 is rejected under 35 U.S.C. §101 as being directed to a manipulation of abstract ideas that does not have practical application.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1, 10 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, claims 1 and 10 contain a newly added phrase of "*indicating potential misclassification*". A term *misclassification* is not found in the Specification and has a different meaning from the one that is deducted from the Specification. A misclassified item is an item that has been added to a wrong class. Such definition usually implies having more than one class and an option of adding an item to a specific class versus not adding said item to that class. However, the Specification does not provide such option. It starts by checking a rule and adding a data item to a collection identified by the rule (see Figures 2 and 3). This operation is recognized as classification determined by the rule that organizes the collection. The following operations detect anomalous data in the collection without any expressing that such data has been incorrectly classified.

Claims 1, 10 and 19 contain a limitation of "*anomalous data item that has not properly been added to the collection despite satisfying the at least one first rule*". According the Specification, an item is added to the collection before determining if it is anomalous (see Figures 2 and 3). Therefore, having an anomalous item that has not been added to the collection contradicts with the Specification. Another way to understand the claimed limitation is that "*has not properly been added*" means that an

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item has been added *improperly*. However, a definition of such *improper* addition is not found in the Specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 10 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 10 and 19 contain a limitation of “*anomalous data item that has not properly been added to the collection despite satisfying the at least one first rule*”. A phrase “*has not properly been added*” has two different meanings: first is that an item has not been added when it was proper to do so, and second is that an item has been added improperly. First meaning contradicts the Specification (as has been described in the Rejection under U.S.C. §112, 1st paragraph above). Therefore, to understand claims Examiner used the second definition. However, it is not clear what an *improper addition* means. So, for the purpose of this examination, “*an anomalous data item that has not properly been added to the collection*” is interpreted as an item that has been added to the collection but found anomalous.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Agrawal et al., U.S. Patent Number 6,094,651 (Agrawal). Specifically:

Claim 1

10. Agrawal discloses a method for indicating potential misclassification, consequent to the application of at least one first rule (col.1, lin.37-45; the use of attributes implies rules are used to place the data into groups based on the particular attributes), of a data item (col.1, lin.29-37, data items are data cells stored in the multiple dimensional database) used by one or more application programs (col.1, lin.21-28) the method comprising:

- Applying the at least one first rule to add the data item to a collection of one or more data items; (col.1, lin.37-45; the use of attributes implies rules are used to place the data into groups based on the particular attributes)
- Calculating statistics regarding the data items in the collection (col.3, lin.1-6; the expected value, such as Self-Exp value, is the statistics);
- Applying one or more second rules to the calculated statistics to identify whether the data item is an anomalous data item that has not properly been added to the collection despite satisfying the at least one first rule (col.2, lin.38-43);
- Flagging anomalous data item as anomalous (col.4, lin.47-52; a cell with a anomalous Self-Exp value is highlighted with a color.); and

- Indicating to at least one user that the collection contains at least one data item that has been identified as anomalous with regard to other data items in the collection (col.4, lin.47-52; highlighting anomalous cells with a color serves as indication to users that the collection contains anomalous data items).

Claims 2-7

11. The step of calculating statistics further comprising:

- (claim 2) calculating a mean data item size and standard deviation for the other data items in the collection (col.3, lin.16-20).
- (claim 3) calculating a mean interval between data items and standard deviation for the other data items in the collection and (claim 4) calculating a mean data item arrival time and standard deviation for the other data items in the collection (col.9, lin.63-67. Data items have time dimension that contribute to the value of cell data. The meaning of time is open for explanation that would have included interval between data and mean data arrival time. Therefore statistics calculation as indicated above claim 2 also applies with respect to time value of the data)
- (claim 5) calculating a presence or absence of keywords for the other data items in the collection and identifying whether the data item is an anomalous data item based on the presence or absence of keywords. (col. 2, lin.43-53; keywords would have been a part of a composite value of data subject to statistics calculation as illustrated in claim 1)

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- (claim 6) calculating statistics for the other data items in the collection is performed in real time (col.1 , lin.21-35; On-Line in OLAP means seven days a week, 24 hours a day, sixty minutes an hour and sixty seconds a minute and OLAP data cubes are used for interactive exploration of data. Hence real time.)
- (claim 7) calculating statistics is performed periodically (col.1, lin.24-28, the users can use OLAP any time and they would have used it periodically)

Claims 8, 9

12. (claim 8) The step of identifying in claim 1 comprises determining whether the data item falls outside a number of standard deviations from statistical calculations (col.6, lin.38-42).

13. (claim 9) A user can set the number of standard deviations (col.4, lin.11-18; the user interface based on Microsoft Excel as front end for user-interaction allows user to set values of data such as standard deviation)

Claims 10-18

14. Claims 10-18 correspond to claims 1-9 respectively by implementing the method steps of claims 1-9 as a computer program stored on a computer readable media. Therefore claims 10-18 are rejected under the same rationale as cited in the rejection of rejected claims 1-9 respectively. Agrawal also teaches the implementation of the method for recognizing and flagging data item using program storage device and a

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machine that embody a program of instructions executed by the machine for the performing the method. (col.3, lin.21- 30)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agrawal et al. (US Patent No. 6,094,651) in view of Yost et al. (US Patent No. 6,567,796).

Claim 19

Agrawal discloses a computerized method for recognizing and flagging a data item (col.1, lin.29-37, data items are data cells stored in the multiple dimensional database) used by one or more application programs (col.1, lin.21-28) as falling within the scope of a rule (col.1, lin.37-45; the use of attributes implies rules are used to place the data into groups based on the particular attributes) but anomalous when compared with other data items falling within the scope of the rule (col. 2, lin.38-43), the method comprising:

applying the a the at least one first rule to add the data item to a collection of one or more data items; (col.1, lin.37-45; the use of attributes implies rules are used to place the data into groups based on the particular attributes);

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calculating statistics regarding the other data items in the collection (col.3, lin.1-6; the expected value, such as Self-Exp value, is the statistics);

applying one or more second rules to the calculated statistics to identify whether the data item is an anomalous data item that has not properly been added to the collection despite satisfying the at least one first rule (col.2, lin.38-43);

flagging the data item as an anomalous data item if the data item is identified as an anomalous data item (col.4, lin.47-52; a cell with a anomalous Self-Exp value is highlighted with a color).

Agrawal does not expressly disclose the method comprising:

retrieving a user preference profile;

taking an action for the flagged data item based upon the user preference profile retrieved.

Yost discloses:

retrieving a user preference profile (col. 8, lines 19-28; personalization module);

taking an action for the flagged data item based upon the user preference profile retrieved (col. 8, lines 34-49; "...*subscribers may assign particular operations to be performed for each of the reports within a project.*").

Agrawal and Yost are analogous art since they are both directed to an implementation of on-line analytical processing system (OLAP). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include

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OLAP with a method for locating data anomalies from Agrawal (col. 2, lines 29-33) and combine it with the personalization module from Yost (col. 8, lines 19-28). The reason for doing so would be to enable subscribers to personalize services used for automatically generating output from an online analytical processing system (Yost, col. 5, lines 12-15). Therefore, it would have been obvious to modify Agrawal in view of Yost by including a personalization module in on-line analytical processing system.

Response to Arguments

Applicant's arguments filed on June 20, 2006 have been fully considered but they are not persuasive. The unpersuasive arguments made by Applicant are stated below:

Regarding the claim rejection under 35 U.S.C. §101:

Examiner considers Applicant's amendment of claim 1 to be sufficient for fixing the problem of 35 U.S.C. §101. The rejection of claims 1-9 under 35 U.S.C. §101 has been withdrawn. However, claim 19 stays rejected under 35 U.S.C. §101 due to its failure in providing user with a tangible result. Additionally, claims 10-18 had to be rejected under U.S.C. §101. These claims are directed towards a computer readable media. However such media is not defined in the Specification. Therefore, in view of broad interpretation of the word media, claims 10-18 are viewed as claiming a non-tangible media that could be represented by a signal.

In reference to Applicant's argument:

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Thus, with respect to independent claims 1 and 10, Agrawal fails to disclose all the claimed elements. Specifically, Agrawal does not disclose or suggest applying one or more second rules to calculated statistics to determine whether a data item is an anomalous data item that may not belong to a collection despite satisfying at least one rule used to put data items into that collection, as set forth in claims 1 and 10.

Examiner's response:

Agrawal discloses items added to a collection based on a corresponding rule as items added to a particular area of the data cube based on their attributes (col.1, lin.37-45). This operation is followed by detecting that an item is anomalous using the rules expressed by finding its degree of anomaly (col.2, lin.38-43). Each cell is associated with a surprise value, and the second rule consists in comparing that surprise value against a specific threshold. Detecting that an item is anomalous is interpreted as detecting that the item may not belong to a collection composed by its surrounding items in a given area of the data cube.

In reference to Applicant's argument:

Further, just as Agrawal does not disclose or suggest identifying anomalies related to classification rules, it does not disclose or suggest indicating to at least one user that the collection contains at least one data item that has been identified as anomalous with regard to other data items in the collection, also as set forth in claims 1 and 10.

Examiner's response:

Agrawal discloses claimed indicating of anomalous items by highlighting anomalous cells with a color (col. 4, lines 47-52).

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Applicant's arguments about rejection of claim 19 are based on the same factors as the rejection of claims 1 and 10. Therefore, in view of the above mentioned arguments, rejection status of claim 19 remains unchanged.

Dependent claims 2-9 and 11-18 stay rejected under 35 U.S.C. §102(b) due to the unchanged rejection status of their corresponding independent claims 1 and 10.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sergey Datskovskiy whose telephone number is (571) 272-8188. The examiner can normally be reached on Monday-Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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S.D.

Assistant examiner

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A handwritten signature in black ink, appearing to read 'Anthony Knight', is written over the printed name.

Anthony Knight

Supervisory Patent Examiner

Technology Center 2100